<center>REMARKS</center>

This paper is responsive to an Office Action mailed November 16, 2007 in which claims 1-30 were pending and examined and given final rejection. Applicants have amended claims 11 and 24 and left claims 1-10, 12-23 and 25-30 pending under active prosecution. Applicants assert that the amendments are supported by the original specification and that the amendments and remarks made herein do not raise new issues and should be admissible after final rejection in accordance with 37 C.F.R. 1.116.

Applicants appreciate the indication made by the Examiner by telephone on January 11, 2008 that the Office action is made in response to Applicant's Reply dated April 12, 2007 and not to correspondence dated September 7, 2007 as given on the PTOL-326 Form.

I.   Rejection of Claims 1-25 and 27-30 Under 35 U.S.C. §103(a)

The Office Action states that claims 1-25 and 27-30 have been rejected under 35 U.S.C. 103(a) as allegedly unpatentable with respect to Gudjonsson et al. ("Gudjonsson"; US 6,564,261) in view of Takats (US 2002/0042848) in further view of newly cited Cain (US 6,628,620). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. The combination of Budjonsson, Takats and Cain fails to teach all of the claim limitations.

> Often, it will be necessary for a court to look to
> interrelated teachings of multiple patents; the effects of
> demands known to the design community or present in
> the marketplace; and the background knowledge
> possessed by a person having ordinary skill in the art, all

in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. *See KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007) *citing In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) *("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")*.

A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007) citing Graham v. John Deere Co. of Kansas City, 383 U. S. 1, 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (*quoting Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))).

Turning to independent claim 1, the claim recites a user interface configured to transmit and receive communications during a call with a first terminal connected to an ad hoc network backbone; and a processor configured to *support an inter-cluster call* between second and third terminals by *establishing a route on the ad hoc network backbone* for each communication packet transmitted from the second terminal to the third terminal.

In maintaining a rejection claim 1, the Examiner cited a new reference Cain since "Gudjonsson and Takats fail to disclose a first terminal connected to an ad hoc network." However, adding this additional reference of Cain fails to correct the deficiencies in the prima facie case for unpatentability. First, Cain teaches away from the claimed

invention and thus cannot be properly combined with Gudjonsson and Takats to correct for their deficiencies. Second, since Gudjosson was not directed to an ad hoc network, the teaching of Gudjonsson fails to teach or suggest the claimed limitations of establishing a route on the network backbone of an inter-cluster call as asserted by the Examiner. Thus, Applicants traverse the rejection.

First, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Moreover, the Federal Circuit has held that teaching away from the art of the subject invention is a *per se* demonstration of lack of *prima facie* obviousness. *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988). Consequently, insofar as Cain teaches away from use of a network backbone in an ad hoc network, it cannot be properly combined to overcome the deficiencies in the other cited references.

In particular, Cain in Col. 1 line 26 to Col. 2 line 14 devotes almost all of the Background of the Invention to distinguishing use of "spine" routing with global topology. Thus, in the excerpt of Cain relied upon by the Examiner at Col. 14, line 56 to Col. 15, line 5 for a "first terminal connected to an ad hoc network", Cain mentions three alternative approaches to handle different types of addresses, none of which pertain to an ad hoc network backbone:

> Given the dynamic nature of ad-hoc networks, various types of addresses may be used for the individual nodes and clusters. Depending upon the particular type of addressing used in a particular application, various other

modifications may be necessary for a given base protocol. For example, if fixed addresses are used, then a **protocol may be included for distributing current cluster membership as the nodes change clusters**, as will be appreciated by those of skill in the art. If such a **protocol is not used, then cluster membership can be determined in a reactive manner using the CLNRR route discovery process**, for example. On the other hand, if addresses are dynamically assigned based upon the particular cluster, hierarchical level (discussed further below), etc., at which the node is located, then a **dynamic name server may optionally be included for allowing a source node to determine the current address for a fixed node name**, as will also be appreciated by those skilled in the art.

First, "a protocol ... for distributing current cluster membership" is insufficient to be an enabling disclosure. Second, the "CLNRR route discovery process" as explained at Col. 9, lines 47-58 pertains to an ad hoc network that does not utilize a network backbone approach to routing inter-cluster calls. Third, a "dynamic name server" is the technology that ties text-based domain names to the numeric IP Addresses that are necessary to locate the domain's server on an Internet-type network and thus is also deficient in describing routing in an ad hoc network in which an IP address is inadequate.

Without a teaching or suggestion from Cain to describe ad hoc routing via a network backbone, Gudjonsson is woefully inadequate then in teaching or suggesting those portions of claim 1 attributed by the Examiner. In particular, the Examiner asserted the following:

Consider claim 1; Gudjonsson clearly discloses a server terminal configured to operate in a cluster on a network backbone (column 8, lines 18-34), comprising: a call with a first terminal (client) connected to the network backbone (column 8, lines 18-34); supporting an inter-cluster call between second and third terminals (clients) by

establishing a route on the network background for each communication packet transmitted from the second terminal to the third terminal(column 8, lines 18-34).

At col. 8, ln. 18-34, Gudjonsson discloses that a user 7 can connect to services within a cluster through a client 11, such as a PC, mobile phone, or PDA. The combination of the cluster 1, users 7, and clients 11 forms a virtual private network. Connections can also be made between services or users in different clusters (Fig. 1). At col. 25, ln. 64 through col. 26, ln. 29, an example is disclosed of a call from a GSM phone to a PC through a voice gateway and a device handler. A second example discloses a call from a phone to a phone.

Applicants assert that Gudjonsson fails to teach or suggest establishing a route on the ad hoc network backbone to support an inter-cluster call. Insofar as it already agreed upon that Gudjonsson is not directed to an ad hoc network, then the meaning of "network backbone" and "routing" differs markedly in Gudjonsson. To illustrate with an extreme case to make the point, an electrician can *route* intercom wiring in a building so that a call can be made between terminals, yet such routing does not teach or suggest inter-cluster call routing. Each claim limitation cannot be interpreted out of context with the other claim limitations.

Consequently, the cited references fail to teach or suggest all of the limitations of the claimed invention and thus a prima facie case for obviousness has not been made. Reconsideration and allowance of claim 1 is respectfully requested, as well as claims 2-11 and 27-28 that depend there from.

With further reference to claim 2 that depends from claim 1, the claim recites an additional feature of establishing the same route for

each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for a first type of call, and to establish a different route for at least two of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call for a second type of call.

In rejecting claim 2, the Examiner relied upon the teaching of Gudjonsson at Col. 7, lines 28-31; Col. 8, lines 18-34. As discussed above, the second excerpt does not pertain inter-cluster routing in an ad hoc network and thus does not teach or disclose this differentiating route based on type of call. With regard to the former excerpt, at col. 7, lines 28-31, Gudjonsson defines a profile as a contact list that defines a route for each user in the list: " 'Profile.' A set of routes where each route is enabled for a user or a group of users as defined in the buddy/contact list. A profile is complete in the sense that for every user there is a route for every mode of communication." Thus, each *route* as contemplated by Gudjonsson pertains to a different *mode of communication*. In Col. 33, lines 6-48, Gudjonsson makes clear that these modes of communications pertain to different devices (e.g., fax machine, web page ager, standard phone, GSM phone, etc.), implying different end terminals and <u>not</u> different routes to the same end terminal.

For at least these additional reasons, reconsideration and allowance of claim 2 is respectfully requested.

With further reference to claim 3 that depends from independent claim 1, the claim recites an additional feature of constructing a network backbone topology map and selecting the established route based on information in the network backbone topology map. The Examiner relied upon Gudjonsson at Col. 16, lines 7-19, which

describes a user mapping function that combines user IDs, each of which is unique with respect to an assigned cluster server, with a cluster ID. Applicants assert that one of ordinary skill in the art would understand that a network backbone topology map for an ad hoc network is not taught or suggested by such "user mapping function". Reconsideration and allowance of claim 3 is respectfully requested for at least these additional reasons, as well as claims 4-5 that depend there from.

    With further reference to claim 4 that depends from intervening claim 3, the claim recites an additional feature of selecting the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the number of intermediary clusters between the second and third terminals along the selected established route for such transmission.

    In rejecting claim 4, the Examiner relied upon the teaching of Gudjonsson at Col. 8, lines 18-34, which describes FIG. 1. As clearly depicted and described, each cluster is adjacent to the other clusters, which is not surprising since Gudjonsson is not addressing ad hoc networks comprised of clusters limited in direct transmission connectivity to other clusters. As such, Gudjonsson fails to teach or suggest *intermediary* clusters and thus does not render claim 4 unpatentable. Reconsideration and allowance of claim 4 is respectfully requested, as well as for claim 5 that depends there from.

    With further reference to claim 5 that depends from intervening claim 4, the claim recites an additional feature of selecting the established route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call as a function of the energy of such transmission.

In rejecting claim 5, the Examiner relied upon Gudjonsson's teaching of "every mode of communication is provided a route" at Col. 7, lines 28-31. Applicants assert that assigning a route based upon energy, which can have significant advantages in battery service life for devices forming a wireless ad hoc network, bears no similarity to setting up a buddy/contact list. Reconsideration and allowance of claim 5 is respectfully requested for at least these additional reasons.

With further reference to claim 6 that depends from independent claim 1, the claim recites an additional feature of establishing the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call by mapping the third terminal to a primary route on the ad hoc network backbone to a first adjacent cluster and a secondary route on the ad hoc network backbone to a second adjacent cluster, and selecting the primary route or secondary route.

In rejecting claim 6, the Examiner relied upon the teaching of Gudjonsson at Col. 7, lines 28-31; Col. 8, lines 18-34, adding that Cain at Col. 14, line 56 to Col. 15, line 5 "discloses that the route is established on an ad hoc network". However, as previously discussed, Gudjonsson discloses that each cluster is adjacent to all other clusters. Each user is contacted by contacting an assigned cluster. Gudjonsson does not teach that an alternate route exists by going through a *second* adjacent cluster to get to the cluster where the user is attached. As such Gudjonsson does not teach having a secondary route. Consequently, Gudjonsson fails to teach or suggest the combination of claim 6. Reconsideration and allowance of claim 6 is respectfully requested, as well as for claims 7-9 that depend there from.

With further reference to claim 7 that depends from intervening claim 6, the claim recites an additional feature of selecting the primary route during a first type of inter-cluster call, and select either the primary or secondary route during a second type of call, the selection of the primary or secondary route being based on the loading of the ad hoc network backbone.

In rejecting claim 7, the Examiner relied upon the same citations from Gudjonsson and Cain as claim 6. Applicants assert that Gudjonsson does not address loading. In addition, Cain merely discloses how traffic dynamics can affect cluster associations (Col. 8, lines 28-57) and not selecting a route based upon loading between two routes that currently exist, rather Cain describes how one route changes to another route over time. Reconsideration and allowance of claim 7 is respectfully requested.

With further reference to claim 8 that depends from intervening claim 6, the claim recites an additional feature of mapping the first adjacent cluster to a first transmitting gateway and a master terminal for the first transmitting gateway, and mapping the secondary route to a second transmitting gateway and a master terminal for the second transmitting gateway.

In rejecting claim 8, the Examiner cited Gudjonsson at Col. 7, lines 28-31; Col. 16, lines 7-19. In addition to not disclosing a secondary route, Gudjonsson fails to disclose forming even one route via gateway to a master terminal of a cluster of an ad hoc network. Moreover, a specific teaching by Gudjonsson has not been pointed out, such a piconet edge terminal given as an illustrative version of a gateway in the present application. Cain does not remedy the deficiencies in Gudjonsson for at

least the reasons given above for claim 1. Reconsideration and allowance of claim 8 is respectfully requested, as well as claim 9 that depends there from.

With further reference to claim 10 that depends from independent claim 1, the claim recites an additional feature of establishing the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and received from the network backbone in response to a location request.

In rejecting claim 10, the Examiner relied upon Gudjonsson at Col. 10, lines 23-46 to teach this feature. However, Applicants assert that the Gudjonson does not teach receiving the network address via a location request. Instead, Gudjonsson creates user anonymity by *not* communicating how to contact the user. The brokered communication of Gudjonsson differs substantially from an ad hoc network backbone performing a location request. Reconsideration and allowance of claim 10 is respectfully requested for at least these additional reasons.

With further reference to claim 11 that has been amended to depend from intervening claim 10 rather than directly from base claim 1, the claim recites an additional feature of establishing the route for each of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call using a network address assigned to third terminal, and stored in the cache. The amendment clarifies an advantage for caching network addresses previously obtained by a location request.

In rejecting claim 11, the Examiner relied upon Gudjonsson at Col. 7, lines 28-31; Col. 10, lines 23-46. Applicants assert that

Gudjonsson fails to caching network addresses previously obtained by a location request. Reconsideration and allowance of claim 11 is respectfully requested for at least this additional reason.

Turning to independent claim 12, the claim recites a method of transmitting and receiving communications at the server terminal during a call with a first terminal connected to an ad hoc network backbone; and supporting an inter-cluster call between second and third terminals by establishing a route on the ad hoc network backbone for each communication packet transmitted from the second terminal to the third terminal.

In rejecting claim 12, the Examiner relied upon the identical teachings of the cited references as claim 1. For at least the same reasons given above for claim 1, reconsideration and allowance of claim 12 is respectfully requested as well as for claims 13-25 and 29-30 that depend there from.

With further reference to claim 14 that depends from claim 12, the claim recites an additional feature of a different route being established for at least two of the communication packets transmitted from the second terminal to the third terminal during the inter-cluster call.

In rejecting claim 14, the Examiner relied upon the teaching of Gudjonsson at Col. 7, lines 28-31, which has been previously noted above in discussing claim 2 as pertaining to a buddy/contact list wherein a user may have multiple modes of communication (i.e., terminal devices), each with *one* route to the respective device. Seeing multiple routes is mischaracterizing the fact that one user has multiple modes of

communication. Reconsideration and allowance of claim 14 is respectfully requested.

With further reference to claim 15 that depends from base claim 12, the claim was rejected on the same basis as claim 3. For the reasons given above for claim 3, reconsideration and allowance of claim 15 is respectfully requested, as well as claims 16-17 that depend there from.

With further reference to claim 15 that depends from base claim 12, the claim was rejected on the same basis as claim 3. For the reasons given above for claim 3, reconsideration and allowance of claim 15 is respectfully requested, as well as claims 16-17 that depend there from.

With further reference to claim 16 that depends from intervening claim 15, the claim was rejected on the same basis as claim 4. For the reasons given above for claim 4, reconsideration and allowance of claim 16 is respectfully requested, as well as claim 17 that depends there from.

With further reference to claim 17 that depends from intervening claim 16, the claim was rejected on the same basis as claim 5. For the reasons given above for claim 5, reconsideration and allowance of claim 17 is respectfully requested.

With further reference to claim 18 that depends from base claim 12, the claim was rejected on the same basis as claim 6. For the reasons given above for claim 6, reconsideration and allowance of claim 18 is respectfully requested, as well as claims 19-22 that depend there from.

With further reference to claim 20 that depends from intervening claim 18, the claim was rejected on the same basis as claim 7. For the reasons given above for claim 7, reconsideration and allowance of claim 20 is respectfully requested.

With further reference to claim 21 that depends from intervening claim 18, the claim was rejected on the same basis as claim 8. For the reasons given above for claim 8, reconsideration and allowance of claim 21 is respectfully requested.

With further reference to claim 22 that depends from intervening claim 18, the claim was rejected on the same basis as claim 9. For the reasons given above for claim 9, reconsideration and allowance of claim 22 is respectfully requested.

With further reference to claim 23 that depends from base claim 12, the claim was rejected on the same basis as claim 10. For the reasons given above for claim 10, reconsideration and allowance of claim 23 is respectfully requested.

With further reference to claim 24 that has been amended to depend from intervening claim 23, the claim was rejected on the same basis as claim 11. For the reasons given above for claim 11, reconsideration and allowance of claim 24 is respectfully requested.

Turning to independent claim 25, the claim recites means for a user to participate in a call with a first terminal connected to an ad hoc network backbone; and means for establishing a route on the ad hoc network backbone for each communication packet transmitted from a second terminal to a third terminal during an inter-cluster call.

In rejecting claim 25, the Examiner cited the identical basis for rejection as for claim 1. For at least the same reasons as given above for claim 1, reconsideration and allowance of claim 25 is respectfully requested.

II.   Rejection of Claim 26 Under 35 U.S.C. §103(a)

Claim 26 was rejected under 35 U.S.C. 103(a) as being unpatentable with respect to Gudjonsson in view of Chrabaszez (US 6,134,673), in further view of newly cited Cain.

In addition to reciting an ad hoc network backbone, the claim recites in part a method wherein designating one of the terminals in the cluster as a backup server terminal when a failure is detected of a primary server terminal.

In rejecting claim 26, the Examiner relied upon Cain to teach the first terminal connected to an ad hoc network. For the reasons give above for claim 1, it is improper to combine the teaching of Cain. In particular, Cain teaches away from an ad hoc network backbone. Reconsideration and allowance of claim 26 is respectfully requested.

It is believed that the application is in condition for allowance and reconsideration is earnestly solicited.

Applicant believes no additional fees other than those listed on the transmittal for extra claims are due for this paper, however, if it found that additional fees are due, please charge Deposit Account No. 17-0026.

Respectfully submitted,

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